Component Mismatch Analysis of RC Polyphase Filters

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Research Background & Objective

- RC polyphase filter is a key in wireless transceiver circuits.
- Component mismatch causes image signal.
  Circuit performance degradation

We have analyzed its effects in theory and simulation

Without mismatch

Only $I$ input signal ($Q = 0$)

Same $I$, $Q$ output amplitudes

With mismatch

Different $I$, $Q$ amplitudes